

Trend Study 10R-5-05

Study site name: Lower Tom Patterson Point.

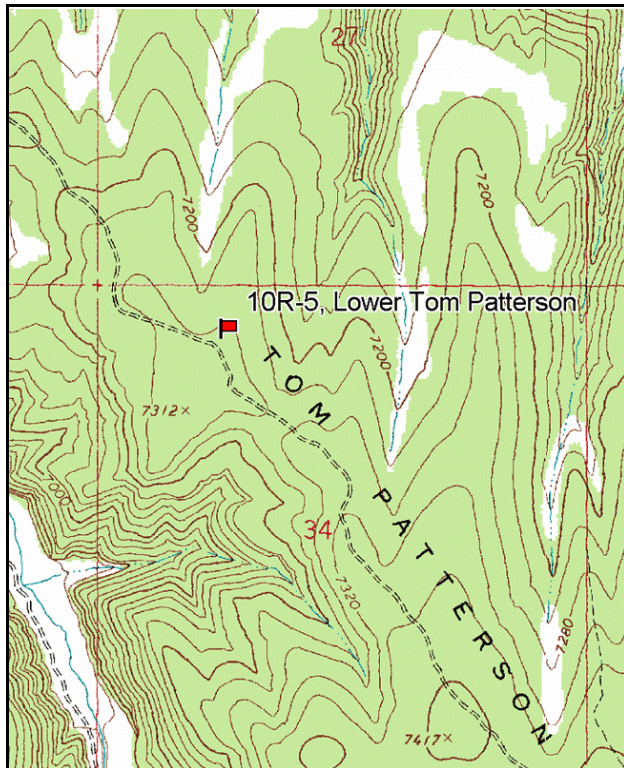
Vegetation Type: Chaining-Burn.

Compass bearing: frequency baseline 0 degrees magnetic.

Frequency belt placement: line 1 (11ft), line 2 (34ft), line 3 (59ft), line 4 (71ft), line 5 (95ft).

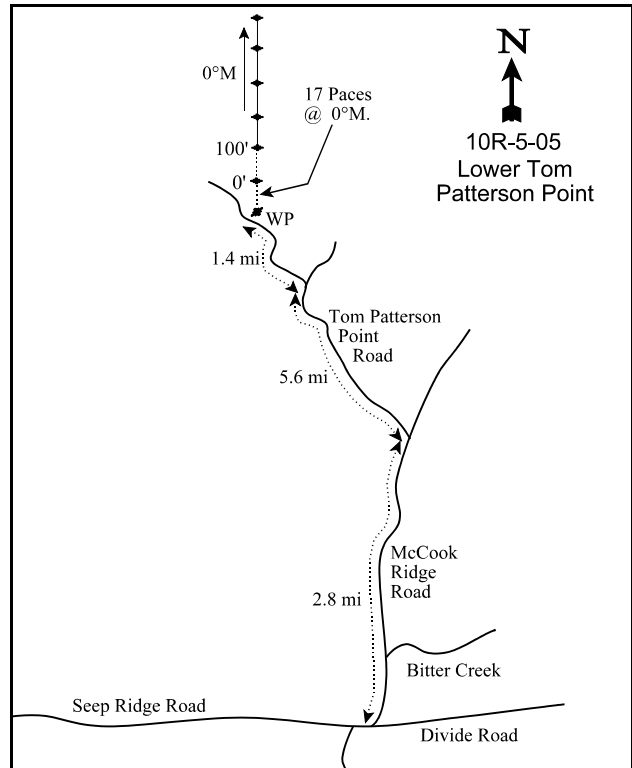
LOCATION DESCRIPTION

From the intersection of McCook Ridge Road and Seep Ridge Road travel north on McCook Ridge Road for 2.8 miles. Turn left onto Tom Patterson Point Road and go 5.6 miles to a fork. Take the left fork and travel 1.4 miles to a witness post on the right (east) side of the road. From the witness post walk 17 paces due north to the 0-foot stake. The study is marked with green, steel fenceposts approximately 12-18 inches in height.



Map name: Tom Patterson Canyon

Township 14S, Range 24E, Section 34



Diagrammatic Sketch

GPS: NAD 27, UTM 12S 4380459 N, 652853 E

DISCUSSION

Lower Tom Patterson Point - Trend Study 10R-5

The Lower Tom Patterson study is located in an area that was chained in the late 1960's and was burned by a wildfire in the mid-1980's. Aspect is north with a gentle 3-5% slope and an elevation of about 7,300 feet. A water tank is located about a half mile south of the site. Water tanks are scattered along this entire point in an attempt to better distribute livestock use. Pellet transect data from 1997 estimated 143 elk, 22 cow, and 1 deer day use/acre (353 edu/ha, 54 cdu/ha and 3 ddu/ha). Use declined in 2000 with 101 elk, 14 cow, and 1 deer day use/acre estimated (250 edu/ha, 35 cdu/ha and 3 ddu/ha). In 2005, use was similar with an estimated 106 elk, 5 cow, and 5 deer days use/acre (263 edu/ha, 13 cdu/ha, and 12 ddu/ha). This area is within the BLM Sweetwater allotment which permits cattle grazing from May 1 through October 31 on a deferred rest rotation basis.

Soil on the site is moderately deep with an effective rooting depth estimated at nearly 17 inches. There is very little rock in the upper soil profile. Soil analysis indicates a sandy clay loam with a neutral pH. Potassium is low at just 38 ppm, where values less than 60 ppm may limit normal plant growth and development (Tiedemann and Lopez 2004). Some slight pedestaling has occurred in the past although there was no sign of recent erosion and protective ground cover is adequate to protect the soil. An erosion condition class assessment rated erosion as stable in 2005.

Shrubs are scarce on this site following the fire. Species encountered on the site include small numbers of mountain big sagebrush, true mountain mahogany, snowberry, broom snakeweed, dwarf rabbitbrush, and rubber rabbitbrush. Mahogany plants showed heavy use and were very decadent in 2005. All shrubs combined produced less than 1% cover each year the study has been read. Point-center quarter data from 1997 estimated only 5 pinyon and 5 juniper trees/acre.

Crested wheatgrass dominates the site. It was found in every quadrat in 2005. Quadrat frequency was 99% in 1997 and 97% in 2000. Nested frequency was highest in 1997, while cover was highest in 2005 at 34%. Other grasses occur only rarely and include: intermediate wheatgrass, a sedge, Russian wildrye, Sandberg bluegrass, needle-and-thread, and smooth brome. No utilization of grasses was apparent in 1997, but use was considered light to moderate during the 2000 reading. A variety of forbs found on the site offer additional preferred spring and early summer forage. Common species include: thistleleaf penstemon, lobeleaf groundsel, and scarlet globe mallow.

1997 APPARENT TREND ASSESSMENT

There is no apparent erosion. Low levels of soil potassium may be a limiting factor on the site. Few browse species are present with mountain big sagebrush having an estimated density of 180 plants/acre. Other species are slowly returning, but are in very low densities. Crested wheatgrass is the dominant grass providing 73% of the total vegetation cover. Other grasses and forbs are present, but are mostly incidental. The Desirable Components Index (see methods) rated this site as poor due to the lack of browse.

winter range condition (DC Index) - poor (37) Mid-level potential scale

2000 TREND ASSESSMENT

Trend for soil is stable. Relative cover of bare ground is similar to 1997 estimates and herbaceous frequency and cover are more than adequate to protect the soil from erosion. There are few shrubs on the site and trend is considered down slightly with a decline in the already low density of mountain big sagebrush and mahogany. Currently, all shrubs combined produce less than 1% cover. Trend for the herbaceous understory is considered stable. Sum of nested frequency for the dominant grass, crested wheatgrass, declined significantly but quadrat

frequency remained high at 97% and cover increased from 14% to 18%. Sum of nested frequency for all grasses combined declined slightly. Frequency of forbs also declined slightly but cover remained similar. This change is obviously caused by the dry conditions of this season. Herbaceous vegetation is still abundant and vigorous and it provides nearly all of the vegetation cover on the site. The slight decline in nested frequency of grasses and forbs is not enough to warrant a downward trend. The Desirable Components Index (see methods) rated this site as poor due to the lack of browse.

TREND ASSESSMENT

soil - stable (0)

browse - slightly down (-1)

herbaceous understory - stable (0)

winter range condition (DC Index) - poor (36) Mid-level potential scale

2005 TREND ASSESSMENT

The soil trend is stable. Relative bare ground increased slightly and litter decreased. The decrease of litter was probably due to previous dry years that had poor production of crested wheatgrass. The ample amount of crested wheatgrass protects the soil from most erosion. The browse trend is stable, but in very poor condition. Mountain big sagebrush increased and many young plants were sampled. Mountain mahogany was not sampled this year and observations on the site noted heavy use and high decadence. This site needs a better browse component for wildlife winter range. The herbaceous understory is stable. The site is basically a monoculture of crested wheatgrass, but it would be preferred to have a more diverse understory. Crested wheatgrass does provide good forage for elk in the spring, fall, and mild winters. The Desirable Components Index (see methods) rated this site as poor due to the lack of browse.

TREND ASSESSMENT

soil - stable (0)

browse - stable (0)

herbaceous understory - stable (0)

winter range condition (DC Index) - poor (36) Mid-level potential scale

HERBACEOUS TRENDS --

Management unit 10R, Study no: 5

Type	Species	Nested Frequency			Average Cover %		
		'97	'00	'05	'97	'00	'05
G	Agropyron cristatum	_b 434	_a 397	_a 400	13.75	17.73	34.31
G	Agropyron intermedium	-	5	3	-	.03	.03
G	Bromus inermis	3	-	3	.03	-	.15
G	Carex sp.	25	28	14	.33	.49	.25
G	Elymus junceus	2	-	2	.15	-	.15
G	Poa secunda	_a 8	_a 8	_b 28	.09	.03	.37
G	Stipa comata	_a -	_a 3	_b 20	-	.03	.99
Total for Annual Grasses		0	0	0	0	0	0
Total for Perennial Grasses		472	441	470	14.35	18.32	36.27
Total for Grasses		472	441	470	14.35	18.32	36.27

T y p e	Species	Nested Frequency			Average Cover %		
		'97	'00	'05	'97	'00	'05
F	Agoseris glauca	-	-	3	-	-	.15
F	Antennaria rosea	_{ab} 7	_b 14	_a 3	.33	.38	.15
F	Arabis sp.	₁₀	3	5	.02	.03	.04
F	Astragalus convallarius	_{ab} 4	_a -	_b 8	.06	-	.24
F	Astragalus sp.	_{ab} 4	_b 13	_a -	.04	.40	-
F	Astragalus utahensis	-	3	1	-	.01	.00
F	Chaenactis douglasii	1	-	-	.00	-	-
F	Chenopodium fremontii (a)	-	-	4	-	-	.01
F	Descurainia pinnata (a)	-	-	8	-	-	.05
F	Erigeron sp.	8	7	2	.07	.04	.02
F	Eriogonum sp.	-	1	-	-	.00	-
F	Hedysarum boreale	_c 33	_a -	_b 13	.82	-	.39
F	Lappula occidentalis (a)	-	-	4	-	-	.01
F	Lygodesmia sp.	4	-	10	.03	-	.07
F	Machaeranthera grindelioides	_b 25	_a -	_a 2	.17	-	.01
F	Penstemon sp.	6	-	5	.07	-	.03
F	Penstemon pachyphyllus	_c 81	_b 52	_a 1	1.23	.74	.01
F	Phlox austromontana	8	12	11	.21	.06	.33
F	Phlox longifolia	-	3	4	-	.00	.00
F	Salsola iberica (a)	-	-	2	-	-	.01
F	Senecio multilobatus	_b 46	_c 70	_a 10	.24	.48	.21
F	Sphaeralcea coccinea	49	60	71	.38	.36	.90
F	Taraxacum officinale	_c 24	_b 9	_a -	.23	.05	-
F	Townsendia sp.	-	-	4	-	-	.01
F	Tragopogon dubius	_b 15	_c 46	_a -	.03	.15	.00
Total for Annual Forbs		0	0	18	0	0	0.07
Total for Perennial Forbs		325	293	153	3.98	2.73	2.60
Total for Forbs		325	293	171	3.98	2.73	2.68

Values with different subscript letters are significantly different at alpha = 0.10

BROWSE TRENDS --

Management unit 10R, Study no: 5

Type	Species	Strip Frequency			Average Cover %		
		'97	'00	'05	'97	'00	'05
B	Artemisia tridentata vaseyana	6	2	5	.38	.38	.53
B	Cercocarpus montanus	2	1	0	.15	-	-
B	Chrysothamnus depressus	1	0	1	-	-	-
B	Chrysothamnus nauseosus	0	0	2	-	-	.01
B	Chrysothamnus viscidiflorus	1	1	2	-	-	-
B	Gutierrezia sarothrae	2	10	12	.01	.45	.27
B	Symphoricarpos oreophilus	2	2	0	.00	.00	-
Total for Browse		14	16	22	0.55	0.84	0.81

CANOPY COVER, LINE INTERCEPT --

Management unit 10R, Study no: 5

Species	Percent Cover
	'05
Artemisia tridentata vaseyana	.38
Chrysothamnus viscidiflorus	.10
Gutierrezia sarothrae	.55

KEY BROWSE ANNUAL LEADER GROWTH --

Management unit 10R, Study no: 5

Species	Average leader growth (in)
	'05
Artemisia tridentata vaseyana	1.9
Cercocarpus montanus	1.5

BASIC COVER --

Management unit 10R, Study no: 5

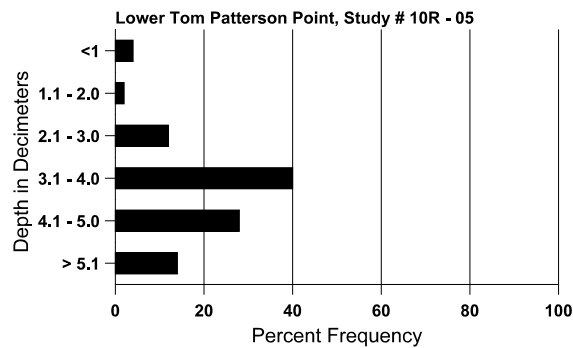
Cover Type	Average Cover %		
	'97	'00	'05
Vegetation	20.14	28.12	40.93
Rock	1.58	.43	1.96
Pavement	7.10	2.22	3.55
Litter	24.71	33.69	18.95
Cryptogams	1.08	2.92	.58
Bare Ground	27.13	35.46	46.19

SOIL ANALYSIS DATA --

Herd Unit 10R, Study no: 05, Study Name: Lower Tom Patterson Point

Effective rooting depth (in)	Temp °F (depth)	PH	% sand	% silt	% clay	% OM	ppm P	ppm K	dS/m
16.9	60.6 (17.7)	6.8	48.0	28.8	23.2	3.11	7.41	38.4	2.0

Stoniness Index



PELLET GROUP DATA --

Management unit 10R, Study no: 5

Type	Quadrat Frequency		
	'97	'00	'05
Rabbit	3	5	17
Elk	70	58	80
Deer	2	5	19
Cattle	4	3	1

Days use per acre (ha)	
'00	'05
-	-
101 (250)	106 (263)
1 (2)	5 (12)
14 (35)	5 (13)

BROWSE CHARACTERISTICS --

Management unit 10R, Study no: 5

		Age class distribution (plants per acre)					Utilization					
Year	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% dying	% poor vigor	Average Height Crown (in)
<i>Artemisia frigida</i>												
97	0	-	-	-	-	-	0	0	-	-	0	-/-
00	0	-	-	-	-	-	0	0	-	-	0	-/-
05	0	-	-	-	-	-	0	0	-	-	0	9/13
<i>Artemisia tridentata vaseyana</i>												
97	180	60	100	80	-	-	11	0	-	-	0	26/31
00	40	40	20	20	-	-	0	0	-	-	0	33/35
05	160	280	80	80	-	-	0	38	-	-	0	25/37

		Age class distribution (plants per acre)					Utilization					
Year	Plants per Acre (excluding seedlings)	Seedling	Young	Mature	Decadent	Dead	% moderate	% heavy	% decadent	% dying	% poor vigor	Average Height Crown (in)
Cercocarpus montanus												
97	40	-	-	40	-	20	100	0	-	-	0	38/35
00	20	-	-	20	-	20	0	100	-	-	0	37/35
05	0	-	-	-	-	40	0	0	-	-	0	33/30
Chrysothamnus depressus												
97	20	-	-	20	-	-	0	0	-	-	0	7/16
00	0	-	-	-	-	-	0	0	-	-	0	-/-
05	20	-	-	20	-	-	100	0	-	-	0	5/9
Chrysothamnus nauseosus												
97	0	-	-	-	-	-	0	0	-	-	0	-/-
00	0	-	-	-	-	-	0	0	-	-	0	14/17
05	40	-	40	-	-	-	0	0	-	-	0	25/28
Chrysothamnus viscidiflorus												
97	20	-	-	20	-	-	0	0	-	-	0	8/14
00	20	-	-	20	-	-	0	0	-	-	0	-/-
05	40	-	-	40	-	-	50	50	-	-	0	13/15
Gutierrezia sarothrae												
97	40	-	-	40	-	-	0	0	-	-	0	7/6
00	260	20	40	220	-	-	0	0	-	-	0	7/9
05	440	-	20	420	-	-	14	9	-	-	0	7/8
Symphoricarpos oreophilus												
97	40	-	-	20	20	-	0	0	50	-	0	34/36
00	40	-	-	20	20	-	100	0	50	-	0	-/-
05	0	-	-	-	-	20	0	0	0	-	0	31/42